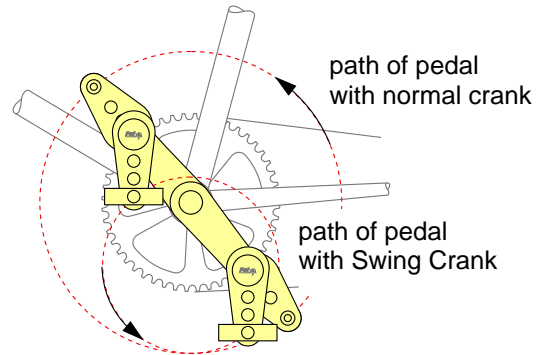


○ Standard version

HIGHPATH ENGINEERING

Pulse Swing Crank

for cyclists with restricted knee movement

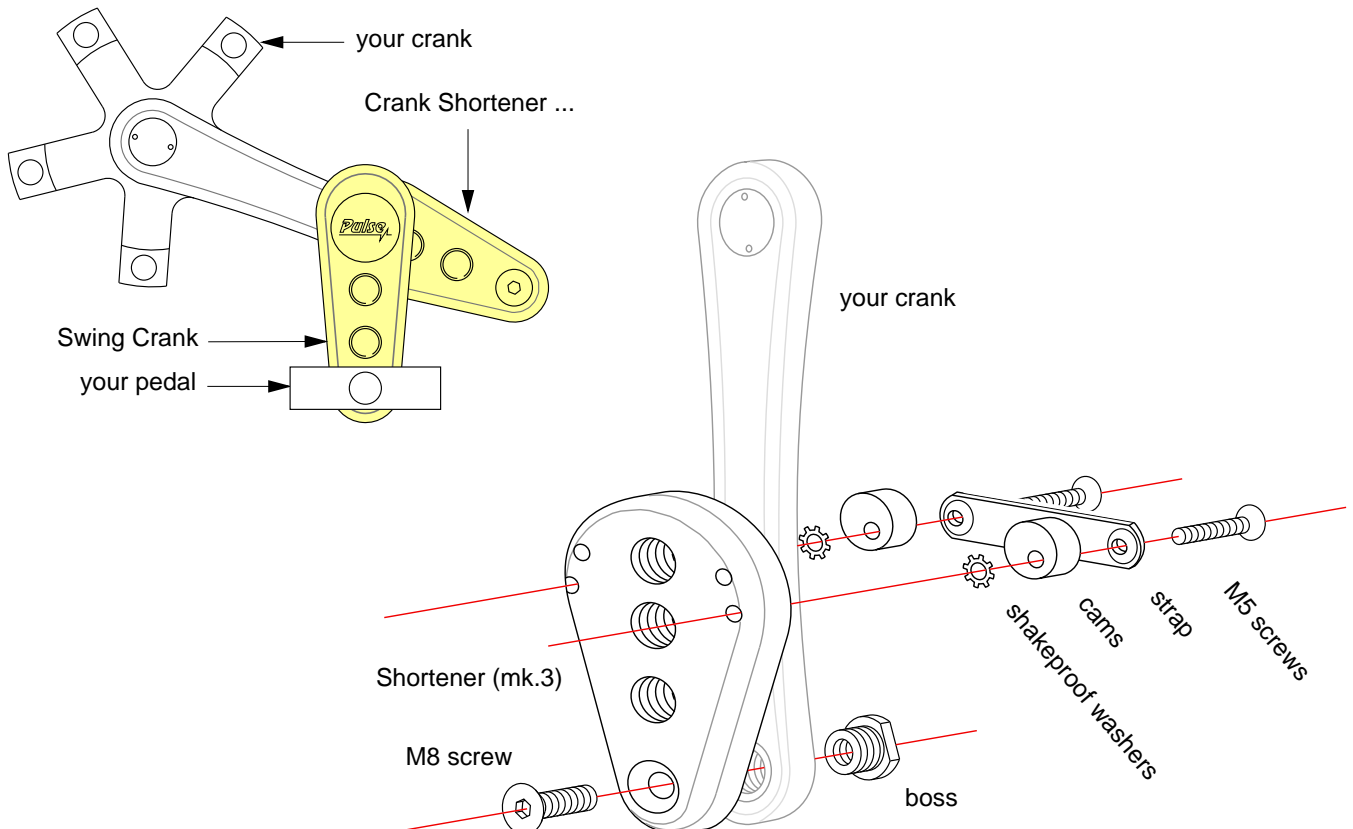


Use a Pulse Swing Crank when one of your knees doesn't bend as much as it should. It enables your leg to contribute as much effort as it can without being lifted so high.

- For use on upright bicycles and tricycles
- Adjustable for different degrees of disability
- Uses your existing crank and pedal
- No need to alter your riding position

A Standard Swing Crank is suitable for cyclists who can raise their foot at least 200mm. It includes a Pulse Crank Shortener which may also be used on its own, and it is supplied with a selection of fittings allowing it to be fitted to most cycles:

- Left cranks up to 41mm wide
- Right cranks up to 41mm, with removeable chainrings



Fitting Instructions

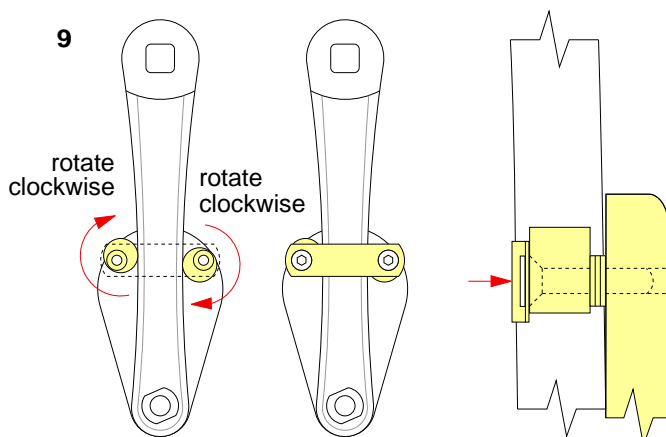
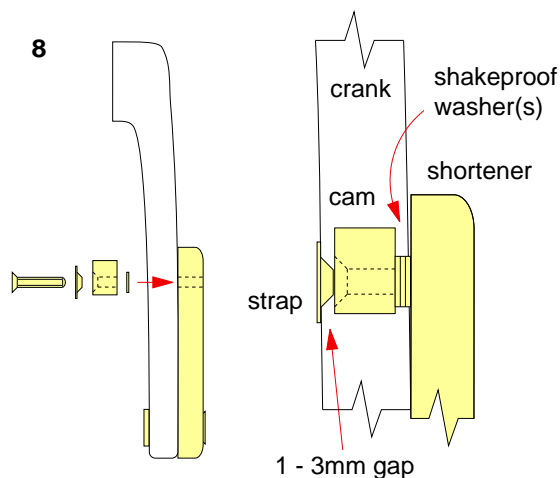
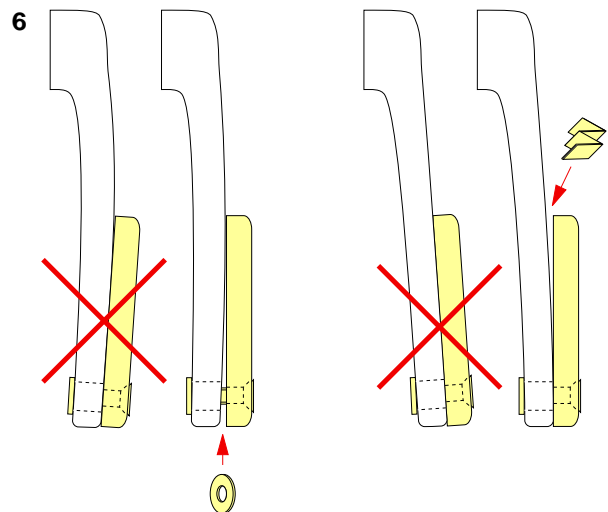
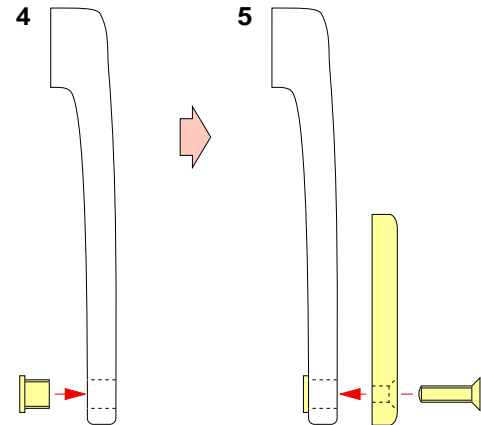
Before you start

- 1 Remove the Crank from your cycle.
Remove any Chainrings from your Crank.
Remove the Pedal from your Crank (*turn Left pedals clockwise and Right pedals anticlockwise*).
- 2 File away any burrs around the pedal hole in your Crank.
- 3 Lightly grease all threads before assembly.

Then fit the Crank Shortener to your crank ...

Fit the Boss and Shortener

- 4 Screw the Boss into the back of the pedal hole in your Crank and tighten it with a 15mm spanner.
- 5 Attach the Shortener to the front of the Crank with the M8 Screw. Align the Shortener and then tighten the Screw with a 5mm hexagon key.
- 6 Check that the Shortener is vertical. If not, add washers and/or packing in the positions shown. (*Strips of metal packing can be cut from tin cans with scissors - but be careful not to cut yourself!*)
- 7 Make sure the Boss and M8 Screw are really tight.



Fit the Cams, Strap and Shakeproof Washers

- 8 Select the pair of holes in the Shortener that best suit your Crank. Select the corresponding Strap.
Use sufficient Shakeproof Washers to leave a 1 to 3mm gap under the Strap. You must use at least one Shakeproof Washer on each side.
- 9 Insert the M5 Screws and rotate both Cams in a clockwise direction (looking from the back).
Hold the Cams firmly against your Crank and tighten the M5 Screws with a 3mm hexagon key, pulling the Strap all the way into the Cam recesses. Make sure they are really tight.
- 10 Check that everything is tight, that the Cams touch the Crank and that they can't move.

Replace the Crank on your cycle

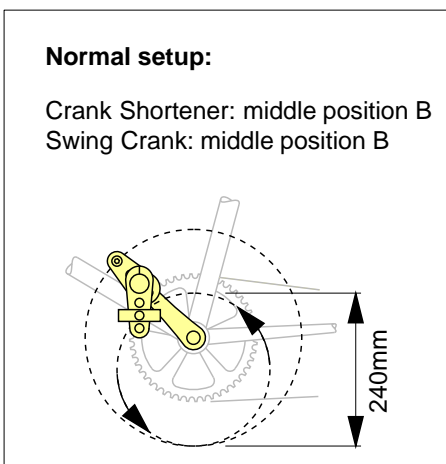
Important

- **Your safety depends on the correct fitting of this item. SEEK PROFESSIONAL HELP IF NECESSARY.**
- The Shortener, Boss and Swing Crank are marked L or R for fitting to a Left or Right crank respectively.
- **After fitting, periodically check the tightness of everything.**

Finally attach the Swing Crank and Pedal ...

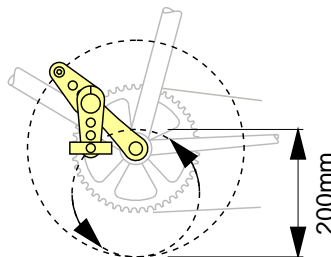
- 11 Lightly grease the threads on both the Swing Crank and your Pedal.
- 12 Screw the Swing Crank into one of the holes in the Crank Shortener and tighten it with a pedal spanner.
- 13 Screw your Pedal into one of the holes in the Swing Crank and tighten it with a pedal spanner.

Select the holes as follows:



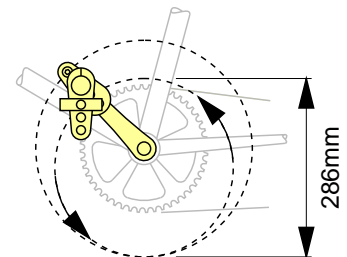
**If you need to bend
your leg less:**

Crank Shortener: short position C
Swing Crank: long position C



**If you can bend
your leg more:**

Crank Shortener: long position A
Swing Crank: short position A



Note These lengths assume your cranks are 170mm long. Increase them by 10mm for 175mm cranks and reduce them by 10mm for 165mm cranks.

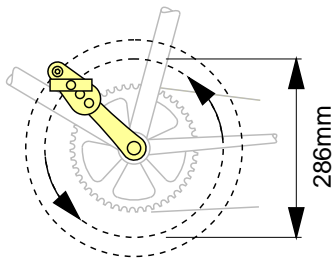
Finally ...

- Raise your saddle, if necessary, so that your legs are almost straight at the bottom of the pedal strokes.
- If none of these setups feels right for you, experiment with the ones that are shown overleaf. Please seek professional help from your physiotherapist or local bike shop.
- Keep your Swing Crank and Crank Shortener clean with warm soapy water.

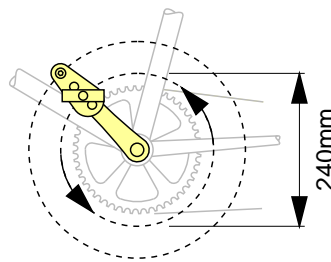
Other possibilities

If you have difficulty straightening your leg completely at the bottom of the pedal stroke, you can use just the Crank Shortener on its own:

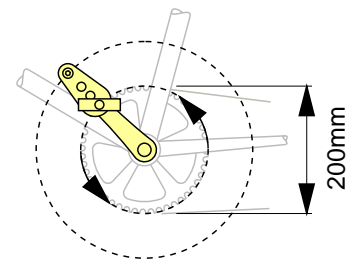
Crank Shortener: long position A



Crank Shortener: middle position B

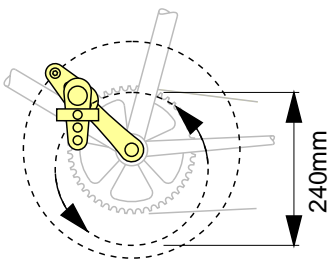


Crank Shortener: short position C

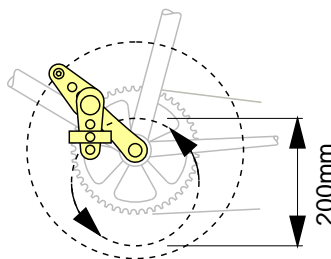


You can also use one of these intermediate setups:

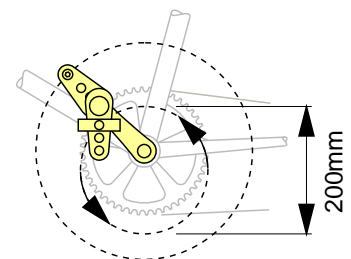
Crank Shortener: middle position B
Swing Crank: short position A



Crank Shortener: short position C
Swing Crank: middle position B



Crank Shortener: short position C
Swing Crank: short position A



Experiment with different setups until you find the best one for you!